I claim:

1. A method for reducing fuel density, while increasing combustion air density without effecting its volume, thereby significantly changing the ratio of fuel mass versus combustion air mass, hence oxygen mass, during the process of ignition and combustion of conventional fluid hydrocarbon fuel, such as natural gas, propane gas, fuel oil or the like, in combustion mechanisms having a combustion area and burners therein for converting said fuel into energy, such as heat, thrust or torque, comprising:

a) providing fluid hydrocarbon fuel as fuel for said combustion mechanism;

b) directing said fuel through the fuel supply conduit functioning as the mechanism's manifold, extending between the fuel delivery valve, being the fuel inlet, and the mechanism's burner arrangement, being the fuel outlet, defining a heat exchanger assembly that extends through a heating zone related to the combustion mechanism;

c) reducing the fuel density in said fuel delivery manifold by heating the fuel as it flows through said heat exchanger assembly to an optimal fuel operating temperature level ranging between 155 and 900 degrees Fahrenheit;

d) reducing fuel density in order to improve the ratio of fuel mass versus oxygen content available in the combustion air volume prior to ignition without increasing combustion air volume;

e) maintaining a continuous supply of density reduced fuel mass of similar delivery volume to the burners in the combustion area of said combustion mechanism.

f) maintaining a preselected constant supply of combustion air mass to said combustion area at an increased or at least maintained density level and optimal temperature range of between plus 50 and minus 25 degrees Fahrenheit.

2. A method according to Claim 1, wherein the density reduction of the fuel is stabilized with an insulating or heat storage material forming part of the heat exchanger assembly.

3. A method according to Claim 1, wherein said heating zone is located adjacent the exhaust gas vent area of the combustion mechanism.

4. A method according to Claim 1, wherein said heating zone is located adjacent the combustion area of the combustion mechanism.

5. A method according to Claim 1, wherein said heating zone is located adjacent a heat source other than the combustion or exhaust gas vent area of the combustion mechanism.

6. A method according to Claim 1, wherein said preselected optimal fuel operating temperature range is within the preselected general fuel operating temperature range from above 100 degrees Fahrenheit up to a level below the flash point temperature of said fuel.

7. A method according to Claim 1, wherein the combustion air is routed through a contained duct system which provides temperature control and the means for air density increase through cooling within a preselected operating temperature range.

8. A device according to Claim 1, wherein the mechanism is a space heater.

9. A device according to Claim 1, wherein the mechanism is a water heater.

10. A device according to Claim 1, wherein the mechanism is a process heater.

11. A device according to Claim 1, wherein the mechanism is a hydronic boiler.

12. A device according to Claim 1, wherein the mechanism is a furnace.

13. A device according to Claim 1, wherein the mechanism is a turbine.

14. A device for reducing fuel density, while increasing combustion air density without effecting its volume, thereby significantly changing the ratio of fuel mass versus combustion air mass, hence oxygen mass, during the process of ignition and combustion of conventional fluid hydrocarbon fuel, such as natural gas, propane gas, fuel oil or the like, in combustion mechanisms having a combustion area and burners therein for converting said fuel into energy, such as heat, thrust or torque, comprising:

a) a heat exchanger assembly defining a heating zone;

b) a fuel supply conduit defining a heat exchanger assembly located in a heating zone related to the combustion area of the equipment, between the mechanism's fuel inlet valve and the burner arrangement, being the fuel outlet area, said heat exchanger assembly providing the conveyance of fluid hydrocarbon fuel to the equipment burner;

c) means to maintain a continuous supply of fluid hydrocarbon fuel to the burner in the combustion area of said mechanism at a preselected optimal operating temperature level ranging between 155 and 900 degrees Fahrenheit.

d) means to provide a preselected constant supply of combustion air volume at an increased or at least maintained density level to said combustion area at an optimal operating temperature range of between plus 50 and minus 25 degrees Fahrenheit.

15. A device according to Claim 14, wherein the insulating material forming part of said heat exchanger assembly balances any temperature fluctuations occurring in the heating zone.

16. A device according to Claim 14, wherein said heating zone is located adjacent the exhaust gas vent area of the combustion mechanism.

17. A device according to Claim 14, wherein said heating zone is located adjacent the combustion area of the combustion mechanism.

18. A device according to Claim 14, wherein said heating zone is located adjacent a heat source other than the combustion or exhaust gas vent area of the combustion mechanism.

19. A device according to Claim 14, wherein said means to maintain a continuous supply of fuel to the burners in the combustion area of the mechanism at said optimal fuel temperature level operates within a preselected operating temperature range from above 100 degrees Fahrenheit up to a level below the flash point temperature of said fuel.

20. A device according to Claim 14, wherein a preselected volume of combustion air is routed through a contained duct system which provides temperature control and the means for density increase of said combustion air volume at a preselected temperature range prior to combustion.

21. A device according to Claim 14, wherein the mechanism is a space heater.

22. A device according to Claim 14, wherein the mechanism is a water heater.

23. A device according to Claim 14, wherein the mechanism is a process heater.

24. A device according to Claim 14, wherein the mechanism is a hydronic boiler.

25. A device according to Claim 14, wherein the mechanism is a furnace.

26. A device according to Claim 14, wherein the mechanism is a turbine.